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Remarks

Entry of the above-noted amendments, and reconsideration of the application and claims are respectfully requested. The amendments to the claims constitute a bona fide attempt by applicants to advance prosecution of the application and obtain allowance of the claims. Amendments are made in view of applicants current view of the invention and should not be automatically interpreted as acquiescing to the substance of the rejections. Claims 1, 6, 9-12, and 14-28 are pending.

Specification objections:

The disclosure was objected to for stated informalities. The specification is amended by correcting typographical errors on pages 3 and 4. Additionally, the specification is amended by referencing the existing descriptions with regard to FIGS. 3 and 4. It is believed that these amendments will render moot the objections to the disclosure.

Claim Rejection - 35 U.S.C. §112:

Claims 1 and 29 were rejected under 35 U.S.C. 112, second paragraph, as being unclear with regard to what is being time-multiplexed. The suggestion offered by the Examiner to specify that "the sub-bands" are being time-multiplexed is accepted and claims have been thus amended.

Claims 13-16 were rejected based on the phrase "communication session". These claims have been amended by deleting this phrase and substituting "traffic channel" therefor. It is believed that this amendment will overcome the subject rejection.

Therefore, it is believed that the current claims are in compliance with 35 U.S.C. 112, second paragraph, and all rejections based on this ground are requested to be withdrawn.

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Claim Rejection - 35 U.S.C. §102:

Claims 1, 3, 4 and 29 were rejected under 35 U.S.C. 102 as being anticipated by U.S. Patent No. 5,812,522 to Lee. Applicant respectfully traverses the rejection.

It is well-settled that there is no anticipation unless (1) all the same elements are (2) found in exactly the same situation and (3) are united in the same way to (4) perform the identical function. For explanatory purposes, applicants discuss herein one or more differences between the applied reference and the claimed invention with reference to one or more parts of the applied reference. This discussion, however, is in no way meant to acquiesce in any characterization that one or more parts of the applied reference correspond to the claimed invention.

In the Office Action it was stated that Lee teaches a system with " a carrier generator (e.g., at control center 12, see FIG. 1) generating a plurality of carriers within each of two bands" Claim 1 requires a carrier generator that generates a plurality of carriers within each of two bands. In Lee, the control center 12 does not contain a carrier generator. In fact, Lee specifically teaches that baseband channels are output from the control center 12. See Lee, column 3, lines 26-30. The reference to "baseband" channels would be clearly understood by one of ordinary skill the art to comprise information that is not carried by (modulated onto) a carrier. Since the claim element, carrier generator, is not taught by Lee as recited in the Office Action, prima facie support for a 35 U.S.C. 102 rejection has not been established. Withdrawal of the rejection is sought.

Since the claims depending on claim 1 should also be allowable if claim 1 is allowable, it is believed that all the remaining claims are also allowable.

Claim Rejections - 35 U.S.C. §103

MPEP §706.02(j) states: "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest

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all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." MPEP §2143.01 states: "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved, as a whole would have suggested to those of ordinary skill in the art. In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992)."

Claims 2, 5-8, 13 and 24-26 were rejected under 35 U.S.C. 103 as being obvious based on Lee in view of U.S. Patent No. 6, 714,514 to Espax. Applicants respectfully submit that the applied references, with or without modification or combination, assuming, *arguendo*, that the modification or combination of the applied references is proper, does not teach or suggest one or more elements of the claimed invention, as further discussed below. Applicant respectfully traverses the rejections and seeks withdrawal of the rejections resulting in allowance of the application.

Claim 6 is rewritten to include limitations of claim 5 from which it originally depended, and thus is not substantively amended. Claim 6 recites that control is mapped to unidirectional channels and that control channel messages are transmitted in one burst by the unidirectional channels. The requirement for communications being unidirectional was alleged to be supported by Espax at column 8, lines 60-column 9, line 19. This cited portion of text consists of claim 1 of Espax. While the claims are part of the disclosure, it is a very unusual occurrence to have claim language recited as supporting a particular teaching. In this instance, it appears that the cited portion does not provide a teaching that control is mapped to unidirectional channels. Therefore, prima facie grounds have not been established to support the 35 U.S.C. 103 rejection of claim 6. Withdrawal of the rejection is sought.

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Also regarding claim 6, the Examiner took official notice that an FDD system implicitly comprises control channels transmitted in one or more bursts. Claim 6 requires that the control channel messages be transmitted "in one burst via said unidirectional channels". The law is well-settled that official notice can be taken of only fundamental facts or principles that are well known. It may be appropriate to take official notice that control messages will be required in order to assign traffic channels. However, it is inappropriate to attempt to use official notice to show a specific requirement that is not well known, i.e. that control channel messages would be transmitted in one burst on a unidirectional channel. It is also well-settled that a device or step may be considered as implicitly disclosed where the subject device or step must be practiced in order for the disclosed subject matter to perform as described. However, where the subject device or step could be accomplished by a variety of techniques or apparatus, a particular device or step cannot be said to be implicitly disclosed since other devices or steps could be utilized to perform the required functions. Utilizing a control channel message transmitted in a single burst (one burst) is clearly not "implicit" based on the applied references since neither of the references provides much, if any, teachings regarding how traffic channels are assigned or controlled. Many other techniques exist to communicate control of channel assignment. Applicant respectfully requests the citation of supporting prior art if the subject rejection is to be maintained. Withdrawal of the rejection of claim 6 based on the currently stated grounds is believed appropriate.

Claims 9-12, 14-20, 27 and 28 were rejected under 35 U.S.C. 103 as being unpatentable over Lee in view of U.S. Patent No. 6, 154,661 to Goldberg. Claim 9, which depends on claim 1, further requires the assignment of uplink carriers and time slots through control messages that are transmitted only to the station to which the uplink traffic channels are to be assigned. Goldberg was alleged in the Office Action to teach that control messages are transmitted only to the station to which the channels are to be assigned at column 6, line 66-column 7, line 53 and more specifically at column 7, lines 4-5 and 14-25. This reference is primarily directed to controlling power to an array of antenna elements at a communication station to achieve a desired overall radiation pattern, e.g. an omnidirectional pattern, for transmitting downlink signals to subscriber units.

Text 1 of Goldberg: Column 6, line 66-column 7, line 5.

Another aspect of the invention disclosed herein is a method of simultaneously transmitting one or more downlinks signals from a communication station to one or more subscriber units over a single conventional channel with an overall desirable radiation pattern over a desired sector, each downlink signal having one or more intended subscriber units.

One of ordinary skill in the art would understand the Text 1 language to explain that downlink signals are simultaneously transmitted over a plurality of antennas to produce a desirable radiation pattern to reach one or more intended subscriber units. There is nothing in this language to reasonably suggest that an assignment of uplink carriers and time slots are made through control messages nor that such messages are transmitted only to the station to which the uplink traffic channels are to be assigned. All subscribers within the targeted transmission area in Goldberg would receive the communication.

Text 2 of Goldberg: Column 7, lines 14-25.

The method includes selecting a set of desirable weight vectors designed for producing an overall desirable radiation pattern over a desired sector, the set including a desirable weight vector designed for transmitting to each intended subscriber unit. A range of azimuths or elevations or both define the desired sector. Typically but not necessarily, the overall desirable pattern is a NOR pattern. Each intended subscriber unit has a location that is (at least approximately) known, and these known locations are used in the selecting of the desirable weight vectors.

The Text 2 language describes that vectors are utilized to control the amount of power delivered to different antennas to result in a desirable radiation pattern. At least the approximate location of the subscribers intended to receive the transmission is known. The locations of the subscribers are used in selecting the vectors so that appropriate radiation pattern will be generated to reach the subscribers. This language describes that signals are directed to a particular sector or portion of the sector where an intended subscriber is believed to be located. However, any and all subscribers in that sector or portion of sector will receive the transmission.

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One of ordinary skill in the art would not understand this language as disclosing or suggesting that the assignment of uplink carriers and time slots be done through control messages that are transmitted only to the station to which the uplink traffic channels are to be assigned.

None of the above relied upon text of Goldberg would be appreciated by one of ordinary skill in the art as teaching the requirement that control messages be transmitted only to the station to which the channels are to be assigned.

Claim 15 recites that a traffic channel is assigned resources only in the direction that there is data to be transmitted. In the Office Action, Goldberg is alleged to teach a communication session being assigned resources only in the direction of data transfer at column 10, lines 33-36.

Applicant respectfully traverses this conclusion. The relied upon language states:

Broadcast Control Channel (BCCH): The BCCH continually broadcast, on the downlink, information including base station identity, frequency allocations, and frequency-hopping sequences.

There is nothing in this language to suggest that resources are assigned only in the direction of data transfer. For example, it is believed that upon receiving a request from a mobile for services, it is common for corresponding uplink and downlink communication channels to be assigned simultaneously to support voice communications from the mobile subscriber and voice communications from the other party, respectively. The above referenced language in Goldberg is consistent with this example. It is clear that one of ordinary skill the art would not understand the relied upon language to teach or suggest that a traffic channel is assigned resources only in the direction of data transfer in accordance with claim 15. Thus, the rejection of claim 15 is not supported by the relied upon language of the reference and its withdrawal is requested.

Claim 28 recites a system wherein a number of carriers in the uplink band is different than a number of carriers in the downlink band. Although Lee and Goldberg are relied upon as grounds for rejecting this claim under 35 U.S.C. 103, it is acknowledged in the Office Action that Goldberg (and Lee as well) do not disclose this limitation. Instead, it is suggested to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. Applicant respectfully

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traverses this rejection. None of the applied references provide such a suggestion. In fact, it is believed that the applied references teach away from the required limitation in that unequal downlink and uplink carriers/slots are utilized. Thus, one of ordinary skill the art would be led away from even considering utilizing a different number of uplink and downlink carriers. In order to accommodate a maximum amount of traffic flow, a critical realization is required to be made that an unequal number of uplink and downlink carriers must be employed. For example, if 80% of the maximum total supportable traffic (up and down link capacity combined) is required for uplink communications, 30% of this desired traffic flow would not be allowed in common prior art systems which allocate 50-50% to uplink and downlink channels, respectively. It is believed that the law is well-settled that the applied prior art references must be considered for all of their teachings, including teachings that are in opposition to the subject invention.

It is believed that the "known by ordinary skill in the art to make adjustments" ground is inappropriate as applied to claim 28. Applicant acknowledges that such a ground of rejection may be applied such as where an applicant claims the use of 7 timeslots for communications where the prior art discloses that 1-20 timeslots may be used for communications in the same environment. That is, there must be something critical with regard to the specific use of 7 timeslots, say instead of 5 or 9 timeslots. However, claim 28 is not such a situation in that applicant is not claiming a specific range of values. The basic recognition by applicant that an unequal number of downlink and uplink carriers, and the accommodation on such an unbalanced set of carriers represents a recognition of a problem in accommodating unbalanced uplink/downlink loading and its corresponding solution. Neither the problem nor attempted solutions are suggested in the applied prior art. It has been held that the recognition of a root problem and its corresponding solution comprises part of the invention. Such an advancement is not properly rejected by merely stating that one of ordinary skill the art could make an adjustment. Withdrawal of the rejection of claim 28 is requested.

Treatment of Claims Not Substantively Amended

Pursuant to MPEP 706.07(c), it would be inappropriate to make an Office Action final should new references (or new grounds in existing references) be applied in support of a rejection of claims in which applicant has made no substantive amendments to necessitate such a change of position. This applies to claims 1, 6, 9 – 12, and 17-28.

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In view of the above amendments and remarks, allowance of all claims pending is respectfully requested. If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call applicants' attorney at 630-584-9206.

Respectfully submitted,



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Dated: September 26, 2004

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